REMARKS

Claims 1-22 are pending in this application. The specification and Fig. 3 has been amended to correct minor informalities found therein. In addition, formal drawings are provided for all figures. The correction to Fig. 3 is to correct the spelling of "discontinuous" in the "scan" labels.

Applicants appreciate the courtesies shown to Applicants' representative by Examiner Chen in the August 24, 2004 personal interview. Applicants' separate record of the substance of the interview is incorporated into the following remarks.

In paragraphs 4 and 5, on page 2 of the Office Action, it was required that Applicants affirm the election of species telephonically made on June 21, 2004. Applicants hereby affirm that election, that is the election of claims 1-17 and 22 drawn to Group I. The election is made with traverse.

It is respectfully submitted that the subject matter of all claims 1-22 is sufficiently related that a thorough search for the subject matter of any one group would necessarily encompass a search for the subject matter of the remaining claims. Thus, it respectfully submitted that the search and examination of the entire application could be performed without serious burden. MPEP §803 clearly states that "If the search and examination of an entire application can be made without serious burden, the Examiner must examine it on the merits, even though it includes claims to distinct or independent inventions." (emphasis added). It is respectfully submitted that this policy should apply in the present application in order to avoid unnecessary delay and expense to applicants and duplicate of examination by the Patent Office.

As pointed out at the interview, the close relationship between the subject matter of all claims is clearly observed in that claims 18-21, directed to a computer readable medium storing a program, basically include programs for performing the method of claims 14-17.

Thus, if the method is allowable, then a computer readable medium storing programs for performing the method should also be allowable.

Thus, the Examiner is respectfully requested to reconsider and withdraw the restriction requirement and to examine all claims in this application.

In paragraph 7, on page 3 of the Office Action, claims 1-4, 6 and 8-17 were rejected under 35 U.S.C. §103(a) as being unpatentable over Okubo, U.S. Patent No. 5,337,296, in view of Yanagi, U.S. Patent RE 36,590; and in paragraph 9, on Page 9 of the Office Action, claims 5, 7 and 22 were rejected under 35 U.S.C. §103(a) as being unpatentable over Okubo in view of Yanagi and further in view of Takahashi et al., U.S. Patent No. 5,966,495, (hereinafter "Takahashi"). The rejections are respectfully traversed.

Applicants' invention of claim 1 calls for a discontinuous position detecting device for detecting an actual discontinuous position between recording contents recorded on recording medium, comprising a scanning unit that scans the recording medium in a first direction and in a second direction that is different from the first direction; a first detecting unit that detects a temporary discontinuous position located in a vicinity of an actual discontinuous position while the scanning unit scans the recording medium in the first direction; a second detecting unit that detects the actual discontinuous position while the scanning unit scans the recording medium in the second direction; and a scan controller that controls the scanning unit to scan the recording medium at a first scan speed except while the second detecting unit detects the actual discontinuous position, and to scan the recording medium at a second scan speed while the second detecting unit detects the actual discontinuous position, the second scan speed being slower than the first scan speed.

Claim 14 calls for a method for detecting an actual discontinuous position between recording contents recorded on a recording medium, the method comprising scanning the recording medium in a first direction at a first scan speed; detecting a temporary

-11-

discontinuous position located in a vicinity of the actual discontinuous position, while scanning the recording medium in the first direction at the first scan speed; scanning the recording medium in a second direction that is different from the first direction at the first scan speed up to a vicinity of the temporary discontinuous position; scanning the recording medium in the second direction from the vicinity of a temporary discontinuous position at a second scan speed, the second scan speed being slower than the first scan speed; and detecting the actual discontinuous position, while scanning the recording medium in the second direction at the second scan speed.

Claim 18, which has been withdrawn and should be considered, calls for a computer-readable medium storing a program for detecting a discontinuous position between recording contents recorded on a recording medium, the program comprising a program for scanning the recording medium in a first direction at a first scan speed; a program for detecting a temporary discontinuous position located in a vicinity of the actual discontinuous position, while feeding the recording medium in the first direction at the first scan speed; a program for scanning the recording medium in a second direction that is different from the first direction at the first scan speed up to a vicinity of the temporary discontinuous position; a program for scanning the recording medium in the second direction from the vicinity of the temporary discontinuous position at a second scan speed, the second scan speed being slower than the first scan speed; and a program for detecting the actual discontinuous position, while feeding the recording medium in the second direction at the second scan speed.

None of the applied references nor their combination suggest such an invention. Further, none of the applied references address detection of a discontinuous position. As none of them address the problem Applicants' invention is addressing, they clearly can not suggest that invention.

The primary reference to Okubo discusses an apparatus and method for searching a target time code recorded on disk. Although Okubo does acknowledge that the data may be continuous or discontinuous on the disk, Okubo does not look for positions of discontinuous data, rather Okubo describes looking for specific addresses either in terms of frames or time. Further, the Okubo methodology does not scan the recording medium in a first direction during the first scan, detecting a temporary discontinuous position, scanning the recording medium in a second direction that is different from the first direction, and then detecting the discontinuous position while moving at a second scan speed in the second direction.

Fig. 14 of Okubo shows continuous data on the recording medium and the method of search and Fig. 15 shows the methodology for discontinuous data. In both cases there are multiple direction searches. In the case of the continuous search example there are six direction switches and the last direction switch is in the same direction as the initial direction. In the discontinuous methodology there are at least five searches. The first two in the same direction and the next three in the reverse direction to find the actual times for which the search is being conducted. The methodologies are described starting in col. 8, line 66 through col. 13, line 23. The searches use criteria, such as twelve time code frames or six frame addresses, to determine when they are getting close. In the case of discontinuous data shown in Fig. 15, the search is stopped not necessarily at the correct point but the one having a value nearest to the time code desired so long as it is within the parameter of frame addresses (col. 13, lines 19-23). Okubo mentions that by adjusting the frame addresses or the time code frame values greater accuracy can be achieved or search time can be reduced (col. 13, lines 24-30). Nowhere does Okubo operate as claimed or address the problem as found in Applicants' claimed invention.

At the interview, the Examiner appeared to take to the position that any reading is considered scanning. Applicants' representative pointed out that in Okubo only the point at

which a stop is made is read. That reading is then compared to an allowable error factor to determine whether the position is close enough to the desired position. Conversely, the American Heritage Dictionary, Second College Edition, defines scan as "to search (a series of punch cards or a magnetic tape) automatically for specific data" or "to look over quickly but thoroughly by moving from one point to another." This is a definition that is supported by Applicants' specification which defines the term "scan at normal speed" to mean to reproduce at normal speed while the term "to scan at fast speed" means to fast forward or reproduce at a fast speed (page 5, lines 20-23). Applicants' specification goes on to say when scanning the video tape at normal speed, the tape head scans a video track as indicated by the head scan vector 23A (page 6, lines 22-24). There is further description and support of this definition of scanning on page 7, line 5-16. The remainder of the specification also supports the definition. As discussed at the interview by Applicants' representative, Okubo does no such thing. As can be seen in Figs. 14 and 15, Okubo only reads at the point where the read head stops.

There was also discussion of a first scan speed and a second scan speed. The Examiner alleged that a read head moving radially outwardly changes speed. Applicants' representative replied that while it may change speed, it would be constantly slowing down as it moved outwardly as the tracks it was reading were longer and therefore it needed to spend more time at each track if it was scanning. Further, when it moved inwardly then the read head would move in with gradually increasing speed because the tracks would become shorter. However, that would be in a scanning mode. Such a mode is not taught by Okubo and thus the speed for jumps could be identical in either direction as there was no intervening reading or scanning. The same point was made with respect to Yanagi as discussed below. Further, Yanagi quite probably discloses a type technique of jump shifting that would be used by Okubo in making his movements.

Yanagi does not overcome the problems of Okubo. Yanagi is directed to an apparatus or method for accurately scanning a light beam across tracks of a recording medium. Yanagi discloses, as shown in Figs. 9, 11, 15a and 15b a method of moving from one track to a designated track. The procedure includes starting with a lens seek in the first direction to build up speed and then a carriage seek in an acceleration mode followed by a carriage seek in a deceleration mode and a lens seek in a deceleration mode to reach the desired track. All movement is in the direction of the desired track. The only mention of any reverse movement is the lens seek states the lens is decelerated on the carriage drive reverse-ward so that the beam spot reaches the destination track (col. 9, lines 13-17). But this is not a scanning in a second direction that is different from a first direction as the lens is still moving forward, i.e., in the direction of the track which it is approaching as is clear by the remaining description (such as that found at col. 10, lines 54-63; col. 12, lines 25-34), which all state that the lens is decelerated to stop at the destination track. The figures make clear there is only one direction of movement of the overall system. Further, Yanagi says nothing about looking for discontinuous positions. As such, there is no reason to combine the two references and it is unclear how combining the references would be accomplished as they operate with two different methodologies and, thus, their combination would destroy one or the other. As such, the combination is improper.

As to Takahashi, he addresses a problem in recovering data on magnetic tapes (Description of Related Art) and solves the problem by using a recording and reproducing apparatus having a memory that serves a recording medium which is made up of solid state devices (col. 5, lines 56-64). As such, the problems of the recording head contacting a tape and causing damage are avoided. Thus, Takahashi is directed to yet a different problem. Further, Takahashi does not address the issue of finding discontinuous positions and can not

overcome the deficiencies of the primary references. It is therefore respectfully requested the rejections be withdrawn.
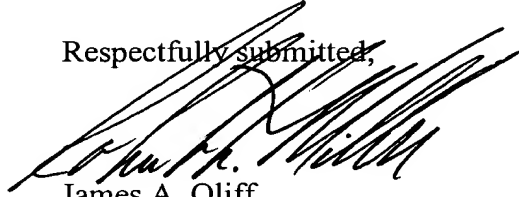
Lastly, at the interview, the Examiner raised a question of how the invention differs from a DV camera's search operation. As pointed out in the interview, it is unclear when such camera's came on the market and whether they could be prior art. However, the Assignee of the invention had a User's Manual, dated 1999 (which is not clearly prior art on its face) for the Sony DCR-PC100 that provides no detail of a search operation (see attached cover sheet and pages 50 and 51). A complete manual can be found at: www.docs.sony.com/release/DCRPC100.pdf. Applicants' representative has a Hitachi DZ-MV580A. Pertinent portions of the User's Manual (cover sheet, pages 59-61) are attached. This document is not prior art, but it too does not show how a search operation is executed.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-22 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

James A. Oliff
Registration No. 27,075

Robert A. Miller
Registration No. 32,771

JAO:RAM/kap

Attachments:
 Replacement Sheets
 Sony Manual, 3 pages
 Hitachi Manual, 4 pages (3 sheets)

Date: September 23, 2004

OLIFF & BERRIDGE, PLC
P.O. Box 19928
Alexandria, Virginia 22320
Telephone: (703) 836-6400

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Charge any fee due to our
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SONY®

Digital
Video Camera
Recorder Mini **DV** Digital Video Cassette

Operating Instructions

Before operating the unit, please read this manual thoroughly,
and retain it for future reference.

Owner's Record

The model and serial numbers are located on the bottom. Record the
serial number in the space provided below. Refer to these numbers
whenever you call upon your Sony dealer regarding this product.

Model No. DCR-PC100   Model No. AC-_____

Serial No. _____   Serial No. _____

Digital Handycam

ⓘ *InfoLITHIUM* Ⓜ ™ SERIES

C|'| Cassette Memory ●™ Ⓛ

MEMORY STICK ™
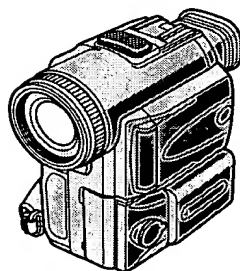
DCR-PC100

Searching a recording by date
– Date search

You can automatically search for the point where the recording date changes and start playback from that point (Date search). Use a tape with cassette memory for convenience. Use the Remote Commander for this operation.
Use this function to check where recording dates change or to edit the tape at each recording date.

Searching for the date by using cassette memory

You can use this function only when playing back a tape with cassette memory (p. 114).

(1) Set the POWER switch to VTR.
(2) Set CM SEARCH in [CM] to ON in the menu settings (p. 76). Default setting is ON.
(3) Press SEARCH MODE on the Remote Commander repeatedly, until the date search indicator appears.
The indicator changes as follows:
TITLE SEARCH → DATE SEARCH → PHOTO SEARCH → PHOTO SCAN → no indicator
(4) Press ►◄◄ or ►►◄ on the Remote Commander to select the date for playback. Your camcorder automatically starts playback at the beginning of the selected date.


To stop searching
Press ■.

50
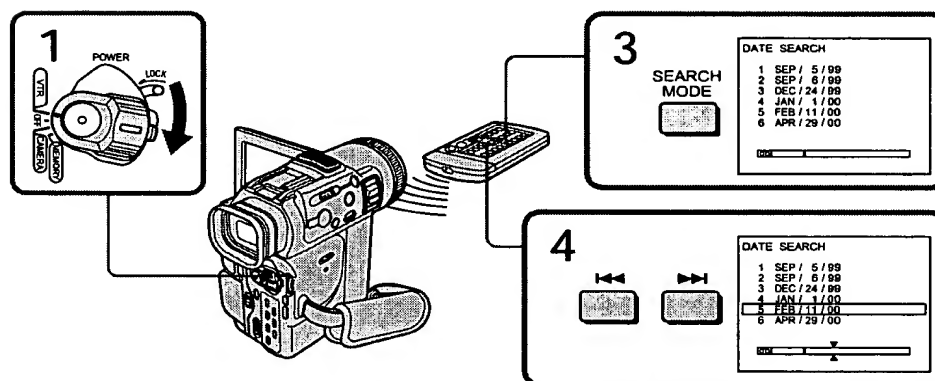
Searching a recording by date – Date search

Note
If one day's recording is less than two minutes, your camcorder may not accurately find the point where the recording date changes.

In the ⬚▭ mark
• The bar in the ⬚▭ mark indicates the present point on the tape.
• The ✗ mark in the ⬚▭ indicates the actual point you are trying to search.

If a tape has a blank portion between recorded portions
The date search function may not work correctly.

Cassette memory
The tape cassette memory can hold six recording date data. If you search the date among seven or more data, see "Searching for the date without using cassette memory" below.

Searching for the date without using cassette memory

(1) Set the POWER switch to VTR.
(2) Set CM SEARCH in ▨ to OFF in the menu settings (p. 76). If using a tape without cassette memory, skip this step.
(3) Press SEARCH MODE on the Remote Commander repeatedly, until the date search indicator appears.
The indicator changes as follows:
DATE SEARCH → PHOTO SEARCH → PHOTO SCAN → no indicator
(4) Press ⏮ on the Remote Commander to search for the previous date or press ⏭ on the Remote Commander to search for the next date. Your camcorder automatically starts playback at the point where the date changes. Each time you press ⏮ or ⏭, your camcorder searches for the previous or next date.

To stop searching
Press ■.
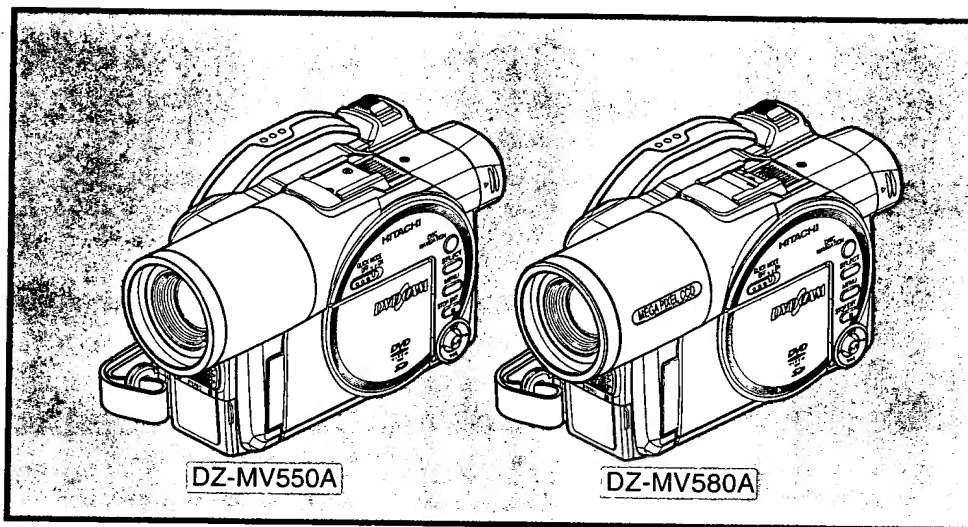
51

HITACHI
Inspire the Next
Instruction Manual

DVD
VIDEO
RAM

SD™

MultiMediaCard™

RAM COMPATIBLE

DZ-MV550A
DZ-MV580A

DZ-MV550A   DZ-MV580A

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(1-800-448-2244)

DVDCAM PC Software Support Center
URL http://dvdcam-pc.support.hitachi.ca/

Thank you for buying a Hitachi product. Please take time to become familiar with the manual and how it is set up. Keep it handy for future reference.
Be sure to read page 187 before unpacking the provided CD-ROM.
The illustration of DZ-MV550A is shown on the front cover of this instruction manual. The method for operating the DZ-MV550A is the same as that for DZ-MV580A.

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English

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is DVD video camera/recorder (P. 49).

er on (P. 48).

RAM R CARD

...nonitor is open during playback of movie, ...and will be heard from the speaker. Adjust ...lume using the volume control buttons (⊖).

...ly stop playback, press the ▶/II button. .../II button again to restart playback. ...top playback midway and immediately start ...ain, the new image will be recorded after the ...1 disc or card (the previous images will not ...n).

...dited on PC or certain types of image data ...ear on this DVD video camera/recorder. ...ecorded on another camcorder may not be ...his DVD video camera/recorder. ...n the amount of data to be played back, it ...ne time for the playback image to appear. ...te the power switch or remove the card ...ESS/PC or CARD ACCESS indicator is lit ...oing so may damage the card or the data

PLAYBACK FROM START OF DISC OR CARD

RAM R CARD

Use the Go To function (P. 61) or Disc Navigation function (P. 105) to play back from the start of disc or card.

SEARCH PLAYBACK OF MOVIE

RAM R

During playback, tilt the joystick to right or left and hold it: Search playback will start.

Hold to right : Scenes will be visually scanned forward

Hold to left : Scenes will be visually scanned backward

Release the joystick when you find the desired image: Normal playback will start from that point.

FRAME ADVANCE/FRAME BACK/SLOW PLAYBACK OF MOVIE

RAM R

During playback pause, tilt the joystick: Frame advance, frame back or slow playback will start.

Tilt to right once : Picture will advance one frame.

Tilt to left once : Picture will go back one frame.

Hold to right : Forward slow playback

Hold to left : Reverse slow playback

After frame advance, frame back or slow playback, the DVD video camera/recorder will enter the playback pause status.

RAM R

Note:
- When you skip or search scenes from playback or playback pause, the screen will be dark briefly.
- See page 163 if search playback does not operate normally.

Note:
- In slow playback, a rapidly moving subject image may be distorted.
- The intervals for playing back frames in frame advance/ frame back/slow playback are as follows:
  Frame advance and forward slow: Approx. 0.03 second
  Frame back and reverse slow: Approx. 0.5 second
- No sound will be heard during search playback or slow playback.

SKIP PLAYBACK OF MOVIE

`RAM` `R`

During playback, tilt the joystick up or down to locate the start of desired scene.

Tilt down once : To skip to the first image of the scene following the one being played back, and start playback.

Tilt up once : To return to the first image of the scene being played back, and start playback.

Hold down : To continuously locate the beginnings of scenes, starting from the scene following the scene being played back. When the desired image appears, release the joystick: Playback will start from that point.

Hold up : To continuously locate the beginnings of scenes backward, starting from the scene currently being played back. When the desired image appears, release the joystick: Playback will start from that point.

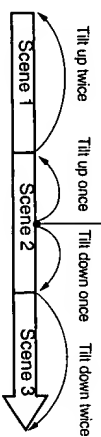Portion being played back

Tilt up twice   Tilt up once   Tilt down once   Tilt down twice

Scene 1   Scene 2   Scene 3

Portion being played back

Tilt up once   Tilt down once   Tilt down twice

Scene 1   Scene 2   Scene 3

Tilting up the joystick at a portion several seconds from the start of scene being played back will return to the start of the scene preceding that being played back.

Note:
• If you perform skip playback during playback pause, the DVD video camera/recorder will enter the playback pause status at the beginning of the located scene.
• Tilting down in the last scene on disc will set the DVD video camera/recorder to the playback pause status at the last image.
• See "Check 3" on page 163 if skip playback does not operate normally.

PLAYING BACK STILLS

`RAM` `CARD`

Tilt the joystick up or down during playback to quickly play back stills in sequence.

Tilt down once : To display stills one by one forward

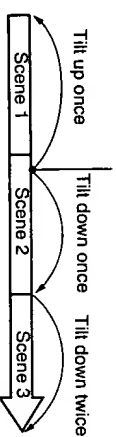Tilt up once : To display stills one by one backward

[When using disc]
Releasing the joystick will start continuous playback.

[When using card]
When the joystick is released, the photo at that point will be displayed, and then the DVD video camera/recorder will enter the playback pause status.
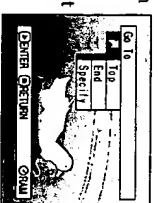Set the slide show function for continuous display (P. 139).

JUMPING TO SPECIFIED POINT (GO TO)

`RAM` `R` `CARD`

1 Press the MENU button during playback.

2 Choose the option (point you want to go to), and then press the ►/II button.

Top : To go to the start, and enter playback pause.
End : To go to the end of last scene, and enter playback pause.
Specify : To go to a specified point and enter playback pause. See the following for details.
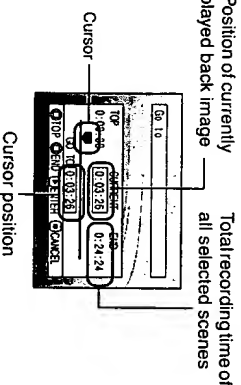
●Specifying the point to view

1 Choose "Specify" in step 2 above, and then press the ►/II button.

The screen for specifying the point to go to will appear.

Position of currently played back image
Cursor
Total recording time of all selected scenes
Cursor position

2 Use the joystick to select the desired time of chosen point.

Tilt up : To select the start.
Tilt down : To select the end.
Tilt to left or right

•Press once : To move the cursor in 10-second units (1-still units for card)

•Hold down : To move the cursor in 1-minute units (10-still units for card)
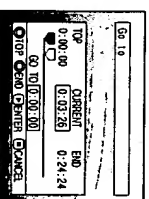
(When the start of scene is selected)
▽ Cursor at current image position.
■ Cursor at (GO TO) position.

3 Press the ►/II button to enter the selection.

The DVD video camera/recorder will go to the specified point and enter the playback pause status.
Pressing ►/II again will start playback.

To cancel the "Go To" procedure midway, press the ■ button before going to the specified point.

Note:
• If multiple scenes are selected using the Disc Navigation function or SELECT button, choosing "Top" will jump to the beginning of selected scenes (P. 133).
• When multiple scenes are selected, the total time of selected scenes will appear in the "total recording time" display.
• With card, the number of stills will appear at the "TOP", "CURRENT", "END" and "GO TO" indicators.
• The cursor may not move at same-pitch intervals.